

CLAIMS

WHAT IS CLAIMED IS:

1. A circuit for amplifying a signal from a sensor, comprising:
a current source; and
a differential amplifier having a first input coupled to the sensor and a second input coupled to the current source.
2. A circuit according to claim 1, further comprising:
a first feedback resistor coupled to the sensor and to a first output of the differential amplifier; and
a second feedback resistor coupled to the current source and to a second output of the differential amplifier.
3. A circuit according to claim 2, wherein a gain of the circuit is approximately twice a sum of resistances of the first feedback resistor and the second feedback resistor.
4. A circuit according to claim 1, wherein the current source is configured to produce a current greater than a current produced by the sensor.
5. A circuit according to claim 1, wherein the current source includes a field effect transistor coupled between the second input and ground and configured to operate in saturation mode.

6. A circuit according to claim 5, further comprising a bipolar junction transistor having an emitter coupled to the second input and the current source.
7. A circuit according to claim 6, wherein the bipolar junction transistor has a base coupled to a reference voltage, whereby a voltage at the second input is fixed.
8. A circuit according to claim 1, wherein the sensor comprises a photodiode.
9. A circuit according to claim 1, further comprising a post-amplifier having inputs coupled to outputs of the differential amplifier.
10. A method of amplifying a signal from a sensor, comprising:
receiving, at a first node, a current generated by the sensor;
sinking, at a second node, a current greater than the current generated by the sensor; and
differentially amplifying the signal based on signals at the first node and the second node.
11. An optical front-end, comprising:
a photodiode, responsive to light borne by an optical link; and
a differential amplifier having a first input coupled to the photodiode and a second input coupled to a constant current source.
12. An optical front-end according to claim 11, wherein the constant current source includes:
a field effect transistor coupled between the second input and ground and configured to operate in saturation mode; and
a bipolar junction transistor having a collector coupled to a supply voltage and an emitter coupled to the second input.